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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,086	12/15/2003	CheeWai Lum	STL11464	3276

7590 03/31/2006  
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EXAMINER

DAVIDSON, DAN

ART UNIT PAPER NUMBER

2627

DATE MAILED: 03/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/736,086

Applicant(s)

LUM ET AL.

Examiner

Dan I. Davidson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11, 13 and 15-17 is/are rejected.
- 7) ☒ Claim(s) 10, 12, 14 and 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. The amendment filed January 5, 2006 has been received and has been made of record. An Office Action in response to the above amendment follows.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 3-9, 13, 15, and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Lewkowicz et al (US 6,975,467 B1).

Re claims 1, 3-4, 6-7, 13, 15, and 17; Lewkowicz et al disclose a system comprising: an environmental stress monitoring module operable to identify data storage device operation in a non-temperature range environmental stress condition, the non-temperature environmental stress condition comprising an amplitude of a data readback signal transduced by a data transducer (Fig. 6, 620, 640); and a write integrity check module for verifying written data integrity during data storage device operation in the environmental stress condition through invoking a software routine that reads back

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each data written to the data storage device and compares the read back data with the data written (Fig. 6, 650).

Re claim 5; Lewkowicz et al disclose signaling a write error if the data written to the data storage device when verification of the data written is not confirmed (Fig. 6, 660, "yes" output; col. 6, lines 6-10).

Re claims 8 and 9; Lewkowicz et al disclose determining a spare location for the written data if the data read back is not identical to the written data (assuming the flag is set; Fig. 6, 700); writing the written data to the spare location (Fig. 6, the output of 700 loops back to 610); reading back the data written to the spare location (Fig. 6, 650); comparing the data read back from the spare location to the data written to the spare location (Fig. 6, 660); and indicating a write error if the data read back from the spare location is not identical to the data written to the spare location (Fig. 6, output of 660).

4. Claims 1-3, 5-6, 11, and 15-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamagishi (US 5,857,059 A).

Re claims 1-2, 5, 11, and 15-16; Yamagishi discloses a system comprising: an environmental stress monitoring module operable to identify data storage operation in a non-temperature range environmental stress condition comprising a vibration level (Fig. 12, S202); a write integrity check module for verifying written data integrity during data storage device operation in the environmental stress condition (Fig. 12, S203); and a module that signals a write error if the data written to the data storage device when verification of the data written is not confirmed (Fig. 12, S204 or S206). A data transducer is inherent for recording in a hard disk unit.

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Re claim 3; Yamagishi discloses that the write integrity check module invokes a software routine verifying each write operation following identification of the environmental stress condition by reading back each data written to the data storage device and comparing the read back data with the data written (Fig. 12, S205; col. 13, lines 13-17).

Re claim 6; Yamagishi discloses that the identifying step comprises: monitoring a non-temperature range parameter of the device (Fig. 1, 28); and signaling a stress condition if the monitored parameter is outside a predetermined range (Fig. 12, S202).

***Allowable Subject Matter***

5. Claims 10, 12, 14, and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Re claim 10; the prior art of record fails to teach or suggest that the non-temperature range parameter of the monitoring step comprises an atmospheric pressure of the device.

Re claim 12; the prior art of record fails to teach or suggest that the non-temperature range parameter of the monitoring step comprises an ECC rate of data transduced by the device.

Re claims 14 and 18; the prior art of record fails to teach or suggest that the non-temperature range parameter of the monitoring step is further preserved for potential failure analysis in the event that a device failure occurs.

***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Rothberg et al (US 6,289,484 B1) teach responding to a request to write data at a specified sector by determining whether the specified sector matches a sector identifier that points to a sector that has failed to provide valid data on the fly; and if so, autonomously performing a read-verify-after-write operation.

Ma (US 5,588,007 A) teaches verifying recently written data after detection of errors induced by flying height.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan I. Davidson, Art Unit 2627, whose telephone number is (571) 272-7552. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea L. Wellington, can be reached on (571) 272-4483. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DID

Dan I. Davidson  
March 26, 2006

  
ANDREA WELLINGTON  
SUPERVISORY PATENT EXAMINER